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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,306	08/21/2003	Byung-Jin Choi	P86-28-03	7847

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EXAMINER
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TENTONI, LEO B

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/645,306	<b>Applicant(s)</b> CHOI ET AL.	
	<b>Examiner</b> Leo B. Tentoni	<b>Art Unit</b> 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 June 2006 has been entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 16, the expression "solidifying said conformable material" does not have clear and proper antecedent basis in the claims principally because claim 14 (from which claim 16 depends) does not positively recite a step of solidification.

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-13, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Kim et al (U.S. Patent 6,355,198 B1), Lee et al (U.S. Patent Application Publication

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2003/0062334 A1) or Choi et al (U.S. Patent Application Publication 2004/0007799 A1).

Kim et al (see the entire document, in particular, col. 5, lines 26-33; col. 10, line 62 to col. 11, line 15; col. 20, lines 34-67; col. 21, line 46 to col. 22, line 9; col. 22, line 46 to col. 23, line 5; col. 24, line 50 to col. 25, line 3), Lee et al (see the entire document, in particular, paragraphs [0011], [0012], [0040] and [0041]) and Choi et al (see the entire document, in particular, paragraphs [0076] - [0078] and [0127]) teach a process of patterning a substrate with a template having a mold as claimed including positioning a conformable material between a substrate and a mold, filling a volume with conformable material through capillary action and solidifying the conformable material, except that the references do not explicitly teach applying a pulling force on at least one of a substrate or a mold, which would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of any one of the cited references principally in order to prevent damage to the substrate and/or mold and to provide the desired patterning to the substrate.

7. Claims 14-30 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al (U.S. Patent Application Publication 2004/0007799 A1).

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Choi et al (see the entire document, in particular, paragraphs [0076] - [0078] and [0127]) teaches a process of patterning a substrate with a template having a mold as claimed including positioning a conformable material between a substrate and a mold, establishing a distance between the substrate and mold, forming a contiguous layer by capillary action having sub-portions and solidifying the conformable material, except that Choi et al does not explicitly teach applying a pulling force on at least one of a substrate or a mold, which would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Choi et al principally in order to prevent damage to the substrate and/or mold and to provide the desired patterning to the substrate.

8. Claims 14-30 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willson et al (U.S. Patent 6,334,960 B1) in combination with either Kim et al (U.S. Patent 6,355,198 B1) or Lee et al (U.S. Patent Application Publication 2003/0062334 A1).

Willson et al (see the entire document, in particular, col. 2, line 35 to col. 5, line 20) teaches a process of patterning a substrate with a template having a mold as claimed including positioning a conformable material between a substrate and a mold, establishing a distance between the substrate and mold,

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forming a contiguous layer having sub-portions and solidifying the conformable material, except that Willson et al does not explicitly teach forming a contiguous layer by capillary action, which is taught by Kim et al (see the entire document, in particular, col. 5, lines 26-33; col. 10, line 62 to col. 11, line 15; col. 20, lines 34-67; col. 21, line 46 to col. 22, line 9; col. 22, line 46 to col. 23, line 5; col. 24, line 50 to col. 25, line 3) and Lee et al (see the entire document, in particular, paragraphs [0011], [0012], [0040] and [0041]) and would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Willson et al in view of either Kim et al or Lee et al principally in order to fill a volume between a substrate and a mold with conformable material. Willson et al does not explicitly teach applying a pulling force on at least one of a substrate or a mold; however, such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Willson et al principally in order to prevent damage to the substrate and/or mold and to provide the desired patterning to the substrate.

9. Claims 36-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willson et al (U.S. Patent 6,334,960 B1) in combination with either Choi et al (U.S. Patent Application

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Publication 2004/0007799 A1) or Colburn et al (article, "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning").

Willson et al (see the entire document, in particular, col. 2, line 35 to col. 5, line 20) teaches a process of patterning a substrate with a template having a mold as claimed including positioning a conformable material between a substrate and a mold and spreading the conformable material across the substrate, except that Willson et al does not explicitly teach droplets of material or forming a contiguous layer by capillary action, which is taught by Choi et al (see the entire document, in particular, paragraphs [0076] - [0078] and [0127]) and Colburn et al (see the entire document, in particular, pages 2 and 3) and would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Willson et al in view of either Choi et al or Colburn et al principally in order to fill a volume between a substrate and a mold with conformable material.

10. Claims 52-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colburn et al (article, "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning") in combination with either Choi et al (U.S. Patent



Application Publication 2004/0007799 A1) or Kurikawa et al (JP 02-92603 A).

Colburn et al (see the entire document, in particular, pages 2 and 3) teaches a process of patterning a substrate with a mold as claimed, except that Colburn et al do not explicitly teach a plurality of droplets, which is taught by Choi et al (see the entire document, in particular, Figures 19A and 19B, and paragraphs [0076] - [0078] and [0127]) and Kurikawa et al (see Figures 1(a) and 1(b) and the English-language translation) and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Colburn et al in view of either Choi et al or Kurikawa et al principally in order to fill a volume between a substrate and a mold with conformable material.

#### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-64 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo B. Tentoni whose telephone number is (571) 272-1209. The examiner

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can normally be reached on Monday - Friday (6:30 A.M. - 3:00 P.M.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Leo B. Tentoni*

Leo B. Tentoni  
Primary Examiner  
Art Unit 1732

lbt